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TITLE: CONTAINER CLEANING DEVICE

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INT-CL (IPC): A47J027/00

ABSTRACT:

PURPOSE: To sanitarily clean a container by providing the

container for
containing rice and a water feeding means for feeding water inside the
container and feeding the water inside the container before reaching the time
set by an operation setting means.

CONSTITUTION: A washed rice cooking device 2 is provided with a main body
frame 6, a rice storage part 7, a cleaning part 8 and a rice cooking part 9,
etc. The cleaning part 8 is provided with the container 1 whose lower end part
is formed thin, a rotating body 15 attached to the approximate center part of
the container 1 and a freely attachable and detachable jacket 17, etc. Then,
when the various kinds of the selection switches of an operation panel 12 are
operated and the reservation time is set at 9:00 on Monday at the present time
of 14:00 on Friday for instance, a cleaning process is executed at 14:00 on
Saturday and on Sunday, a solenoid valve for feeding the water is opened and
the water is fed to the container 1 and stored. Also, a stop valve for
discharging the water is opened after the prescribed period of time and the
water is discharged. By cleaning the container 1 before starting a rice
cooking operation at the reserved time in such a manner, the sticking of sugar
or the like is prevented.

PATENT ABSTRACTS OF JAPAN

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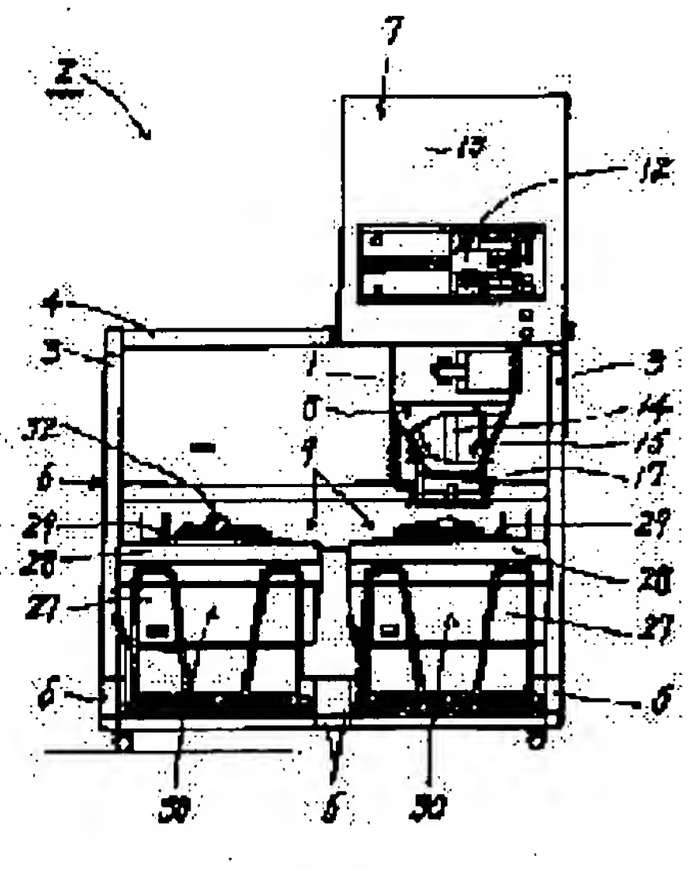
HASE KIHACHIRO
TOKUNAGA NAOKI
KANEFUJI YUJI
MIZUMOTO TAKESHI

(54) CONTAINER CLEANING DEVICE

(57)Abstract:

PURPOSE: To sanitarily clean a container by providing the container for containing rice and a water feeding means for feeding water inside the container and feeding the water inside the container before reaching the time set by an operation setting means.

CONSTITUTION: A washed rice cooking device 2 is provided with a main body frame 6, a rice storage part 7, a cleaning part 8 and a rice cooking part 9, etc. The cleaning part 8 is provided with the container 1 whose lower end part is formed thin, a rotating body 15 attached to the approximate center part of the container 1 and a freely attachable and detachable jacket 17, etc. Then, when the various kinds of the selection switches of an operation panel 12 are operated and the reservation time is set at 9:00 on Monday at the present time of 14:00 on Friday for instance, a cleaning process is executed at 14:00 on Saturday and on Sunday, a solenoid valve for feeding the water is opened and the water is fed to the container 1 and stored. Also, a stop valve for discharging the water is opened after the prescribed period of time and the water is discharged. By cleaning the container 1 before starting a rice cooking operation at the reserved time in such a manner, the sticking of sugar or the like is prevented.



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[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]	
[Date of final disposal for application]	
[Patent number]	
[Date of registration]	
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[Date of requesting appeal against examiner's decision of rejection]	05.06.2003
[Date of extinction of right]	

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
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CLAIMS

[Claim(s)]
[Claim 1] The container washing station considered as the configuration which supplies water in a container before reaching at the time of day which was equipped with the container 1 which holds rice, a water supply means to supply water in this container, and an activity setting means to set up activity start time, and was set up with this activity setting means.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application] This invention relates to the container washing station which can be used for the rice-cleaning rice cooker which washes and carries out cooking rice of the rice.
[0002]
[Description of the Prior Art] When a reservation function is given and it reaches at the set-up time of day, it is the configuration which measures and washes rice.
[0003]
[This Object of the Invention] However, since there will be about two days (48 hours) not much when finishing an activity, for example on Friday of a weekend and starting an activity on Monday of the next week if the time of day set up from current time is long, a container is insanitary if an insect enters in a container between them.
[0004]
[Means for Solving the Problem] By supplying water beforehand to a container, this invention offers the container washing station which cleans up a container and can raise the quality of boiled rice, and provided the following technical means. That is, it has the container 1 which holds rice, a water supply means to supply water in this container, and an activity setting means to set up activity start time, and before reaching at the time of day set up with this activity setting means, it considers as the container washing station considered as the configuration which supplies water in a container.
[0005]
[Function] An operator sets up next activity start time. And if it reaches at setting time of day, an activity will be started, but before reaching at this time of day, water is supplied to a container 1 with a water supply means.
[0006]
[Effect] Since water is automatically supplied in a container before reaching at next activity start time, things do and are sanitary if a container is washed.
[0007]
[Example] Hereafter, the example of this invention is explained based on a drawing. First, if the configuration is explained, rice-cleaning cooking-rice equipment 2 is equipped with the body frame 6 which carried out the framework of two or more longitudinal framings 3, transverse frames 4, and foot frames 5 to one, ****** 7, the washing section 8, and cooking-rice section 9 grade.
[0008] ****** 7 carried out the interior of the hopper (not shown) which stores rice to the case 13 of the core box which opened the lower part wide, and has formed various kinds of selecting switches 10 which choose the amount of cooking rice, the amount of water, how to wash, etc. as a front wall, and the control panel 12 equipped with each display implement 11 grade. In addition, the specified quantity [every] delivery roll (not shown) is mostly formed for the rice currently stored near the lower limit of this hopper pivotable.
[0009] While the washing section 8 attaches the open section of said case 13 in the inferior surface of tongue of a wrap bottom plate (not shown) for the upper limit section, enabling free attachment and detachment A vertical both-ends side It opens. And the lower limit section It has the jacket 17 grade which opened the vertical both-ends side on the inferior surface of tongue of the supporting plate 16 which fixed on the body of revolution 15 and the lower limit section periphery of a container 1 which have been attached in the peripheral face of the container 1 formed thinly and the revolving shaft 14 of this container 1 which has an axis in a lengthwise direction and was mostly prepared in the core pivotable in it wide, and has been attached in it free [attachment and detachment]. And this jacket 17 was formed in the shape of [of two rooms] hollow, and the filter 18 which expects the upper limit section to 1 interior of a room at

lower limit opening of said container 1, and expects a lower limit to lower limit opening of a jacket 17 is formed. Moreover, the closing motion valve 20 which opens and closes the exhaust port 19 of a jacket 17 is formed in the other interior of a room of a jacket 17.

[0010] In addition, this closing motion valve 20 was attached in the longitudinal direction at the shaft 21 which has an axis, and this shaft 21 is in contact with the operation system 23 which operates by the solenoid 22. 24 is a return spring. Moreover, 25 is the solenoid valve formed in the pars intermedia of the feed pipe 26 which is open for free passage in the source of water supply while it is open for free passage for the shower nozzle (not shown) expected to a container 1. while constituting ****** 7 and the washing section 8 in one through a bottom plate as mentioned above -- horizontal migration means, such as a motor (not shown) and a roller (not shown), -- the front view of rice-cleaning cooking-rice equipment 2 -- setting -- a longitudinal direction -- a round trip -- it constitutes movable. And a feed hopper (not shown) is prepared in said bottom plate, and the rice which it let out with a delivery roll is considered as the configuration which goes into a container 1 through a feed hopper.

[0011] The cooking-rice section 9 has formed two or more (in the example, one piece or three pieces or more are sufficient as two pieces but) rice cookers 30 which have the cooking-rice lid 29 grade which opens and closes the inner kettle 28 which can be taken out and inserted in the vertical direction, and an inner kettle 28 in the longitudinal direction in the front view of rice-cleaning cooking-rice equipment 2 from the outside iron pot 27 which carried out the interior of the gas range etc., or the outside iron pot 27. In addition, this rice cooker 30 is formed in the cross direction withdrawal.

[0012] The shutter 31 is formed by the plane view rectangle-like plate, and has formed the handle 32 in the top-face center section. And this shutter 31 is formed more greatly than the U.S. feed hopper 33 of the shape of a circle prepared in the center section of the cooking-rice lid 29. The shutter guide rail 34 was located in the cross direction, prepared [right-and-left both sides] the longitudinal direction in the top face of the cooking-rice lid 29 on both sides of said rice feed hopper 33 at one, and has formed said shutter 31 in the cross direction possible [guidance]. 35 is the stopper which prepared in the back end side of the shutter guide rail 34 free [attachment and detachment] with the screw (it is a carp lice bolt or a nut is sufficient in the example) 36.

[0013] 37 is the stopper reliance object which is between said shutter guide rails, and was prepared in the top face at the right-and-left both ends of a shutter 31, and if a shutter 31 moves to the backside and the U.S. feed hopper 33 is opened fully, it is prepared in the height which asks said stopper 35. Moreover, the spring stop shaft 38 is set up by the back end side of a shutter 31 to the top face of longitudinal-direction pars intermedia, and the pars intermedia of each shutter guide rail 34. 39 is a shutter return spring which has stopped on the stop shaft 38 which stopped on the stop shaft 38 which prepared the end section in the shutter guide rail 34, and prepared the other end in the shutter 31. When not giving external force to a handle 32, the shutter return spring 39 is the configuration of opening the U.S. feed hopper 33 for the stop shaft 38 prepared in the shutter 31 fully by the tension shutter 31.

[0014] 40 is a connecting plate which connects the front end side of said shutter guide rail 34, and is prepared free [attachment and detachment] with the screw (in the example, although it is a carp lice bolt, a nut is sufficient) 41. The shutter switchgear 42 is equipped with the shutter closing motion arm 45 equivalent to a handle 32, when a base is attached in the cam 44 and cam 44 which carry out forward inverse rotation to the direction of a drawer of a rice cooker 30 by the forward inversion motor 43 formed in the opposite side free [attachment and detachment] and it rotates for them. 46 is a halt location sensing switch whose 48 a right shutter open switch and 47 sense a left shutter open switch, and senses the halt location of the shutter closing motion arm 45, and is a switch which detects open ["open"] or "a halt", respectively.

[0015] Drawing 9 is another example of a shutter 31, divided the handle 32 in the vertical direction, and has attached the lower part 49 in the shutter 31. The upper part 50 is attached in the upper limit section of the vertical pin 52 which attached in the lower limit section the rod 51 which has an axis in a longitudinal direction. 53 is the compression spring which fitted in the vertical pin 52 and was prepared between the inferior surface of tongue of the upper part 50 of a handle 32, and the top face of the lower part 49. And it constitutes so that the rod 51 which moved to the bottom in the length pin 52 which it is above the burring 54 which formed the rod 51 in the U.S. feed hopper 33 of the cooking-rice lid 29 when the upper part 50 was pushed on the compression spring 53, it separated with the lower part 49 and it was located in the bottom, a shutter 31 moves freely along with the shutter guide rail 34, and the upper part 50 pushes a compression spring 53, and contacts the lower part 49 may regulate migration in slide contact with burring 54. Therefore, in a motion of a shutter 31, since it can move freely, regulation or when lifting the cooking-rice lid 29 independently and carrying it after a cooking-rice activity, on both sides of a finger, it is safe with an easy means to move in the vertical direction in the upper part 50 of a handle 32.

[0016] In addition, although rice-cleaning cooking-rice equipment 2 is not illustrated, it is considered as the configuration controlled by the microcomputer. Below, the flow chart of a part of drawing 13 of a flow chart is used together and explained about the operation. First, if reservation cooking rice is explained, will operate the selecting switch 10 of a control panel 12, and a desired working condition will be inputted. For example, when current time set to 14:00 on Friday and sets reservation time of day to 9:00 on Monday (refer to drawing 14), It goes into 14:00 on Saturday, and 14:00 on Sunday at a washing process, the closing motion valve 20 closes [a solenoid valve 25] an exhaust port 19 by excitation of "open" and a solenoid 22, water supply is performed, and water is stored in a container 1 (refer to drawing 15). And the energization to a solenoid valve 25 is canceled after predetermined time, and water supply is suspended, and the energization to a solenoid 22 is canceled, and the closing motion valve 20 opens an exhaust port 19 wide, and discharges the reservoir water of a container 1. Therefore, since the container 1 for washing is washed before starting an activity at the reserved time of day, it can cancel that rice bran adheres and can steam completely in the good boiled rice of a flavor.

[0017] And if it amounts to 9:00 on Monday, it will let out the rice in a hopper and will let it out with a roll. Then, rice is held in a container 1 through the feed hopper (not shown) of a bottom plate. Moreover, a solenoid valve 25 becomes "open" and supplies water in a container from a nozzle through a feed pipe 26. And it rotates, and body of revolution 15 agitates and washes water and rice. The sanitary sewage produced at this time is discharged from a jacket 17 through a filter 18 and an exhaust port 19.

[0018] Then, since a solenoid 22 is excited after finishing washing, the closing motion valve 20 moves forward with the shaft 21 which presses a return spring 24 by the operation system 23, and moves, and closes an exhaust port 19. In addition, although not illustrated, at least water closes opening (not shown) according to an activity with the same said of a valve as water. Next, a solenoid valve 25 becomes "open" from "close", and water is supplied to a container 1 from a nozzle through a feed pipe 26. And if it is filled to the brim with water, a solenoid valve 25 will be made "close" and water supply will be suspended.

[0019] If it continues and the energization to a solenoid 22 is canceled, since, as for a valve, at least water returns to the original location with a spring 24, in relation to this, the water in a container will be discharged through opening and the wastewater jacket 17 at least in a filter 18 and water. If predetermined time of after, i.e., predetermined water, is arrived at, a solenoid 22 will be excited again and a valve will close [water] opening at least for water by an operation system etc.

[0020] And if a dropping valve descends, the water and rice which have been held in the container 1 will fall from ******, and will be held in an inner kettle 28 through the U.S. feed hopper 33. Then, a dropping valve goes up and closes ******. It continues, and if the forward inversion motor 43 is reversed and it returns to the original location (b), the halt location sensing switch 48 will be turned "on." Then, the forward inversion motor 43 stops. In relation to this, the shutter 31 pulled by the shutter return spring 39 moves, and closes the U.S. feed hopper 33. A shutter 31 is caught by the connecting plate 40 at this time.

[0021] An ignition switch is turned "ON" and a cooking-rice activity is begun (when immersed within an inner kettle, a cooking-rice activity is started in between predetermined). Then, after finishing cooking rice, a rice cooker 30 is pulled out. Next, in supplying rice and water to the left-hand side rice cooker 30 in front view, it reverses the forward inversion motor 43. Then, rotate in the direction of arrow-head RO, it is made to resist, push and move to the force of the shutter return spring 39 in a handle 32, and the shutter closing motion arm 45 opens the U.S. feed hopper 33. Then, since the forward inversion motor 43 will rotate normally and the shutter closing motion arm 45 will be returned to the original location if an inner kettle 28 holds rice and water, a shutter 31 also returns to the original location and closes the U.S. feed hopper 33.

[0022] Thus, since a shutter 31 can be opened and closed by one shutter closing motion arm 445, it is cheap and a configuration also becomes easy. Moreover, since the shutter switchgear 42 can be formed in the pars intermedia of a rice cooker 30 and a rice cooker 30, the tooth space between rice cookers can be used effectively.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The front view of rice-cleaning cooking-rice equipment.
[Drawing 2] The side elevation of rice-cleaning cooking-rice equipment.
[Drawing 3] The side elevation of a container.
[Drawing 4] The front view of a control panel.
[Drawing 5] The top view of the cooking-rice section which the shutter closed.
[Drawing 6] The top view of the cooking-rice section which opened the shutter of one rice cooker.
[Drawing 7] Rear view of a cooking-rice lid.
[Drawing 8] The top view of a shutter switchgear.
[Drawing 9] The top view of the rice cooker which has the cooking-rice lid of another example.
[Drawing 10] The forward sectional view of the cooking-rice lid of a shutter free condition.
[Drawing 11] The forward sectional view of the cooking-rice lid of a shutter fixed condition.
[Drawing 12] Block circuit.
[Drawing 13] Flow chart.
[Drawing 14] Routing Fig.
[Drawing 15] Timing diagram.
[Description of Notations]
1 Container

[Translation done.]

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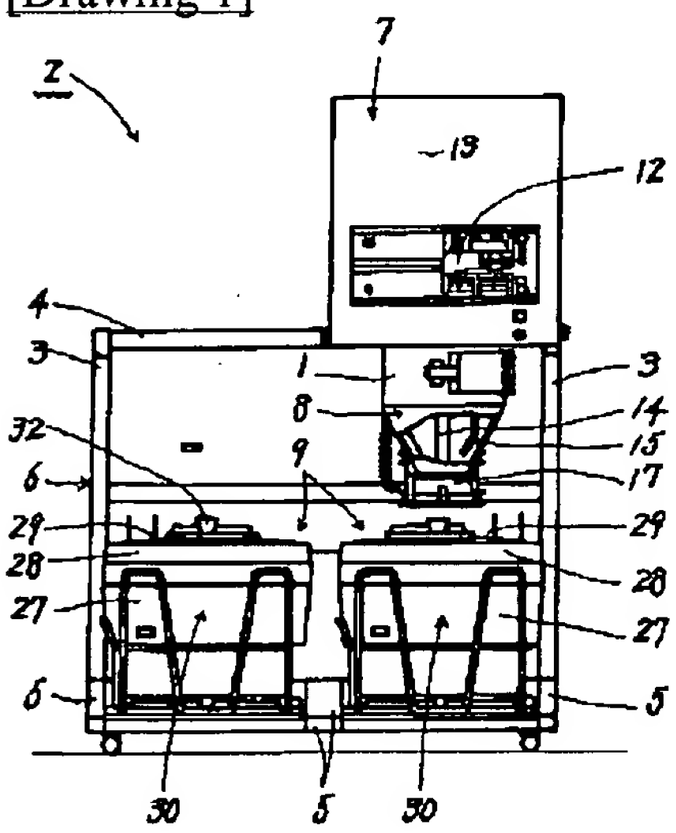
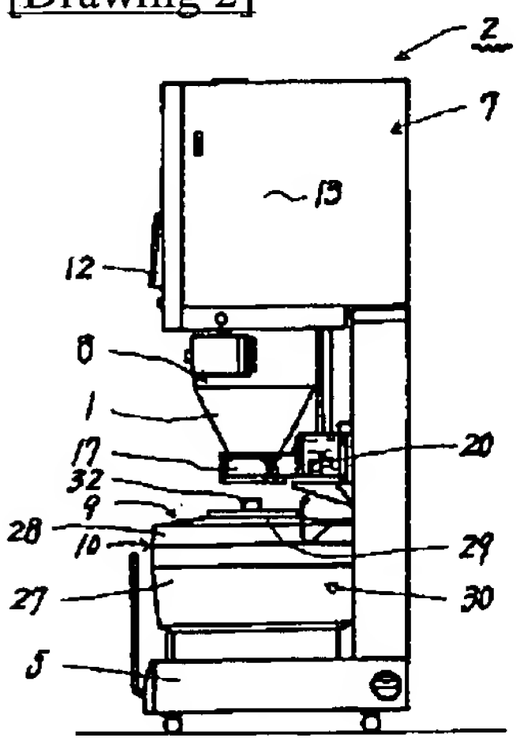
DRAWINGS

[Drawing 1]



[Drawing 2]



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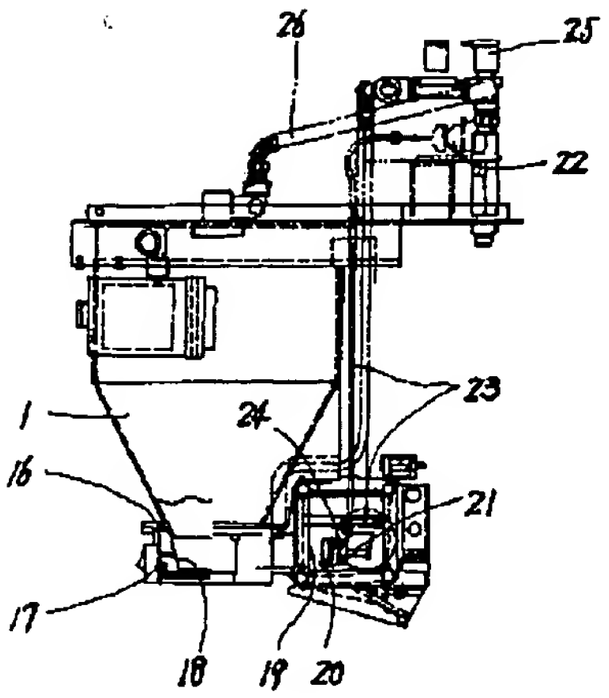

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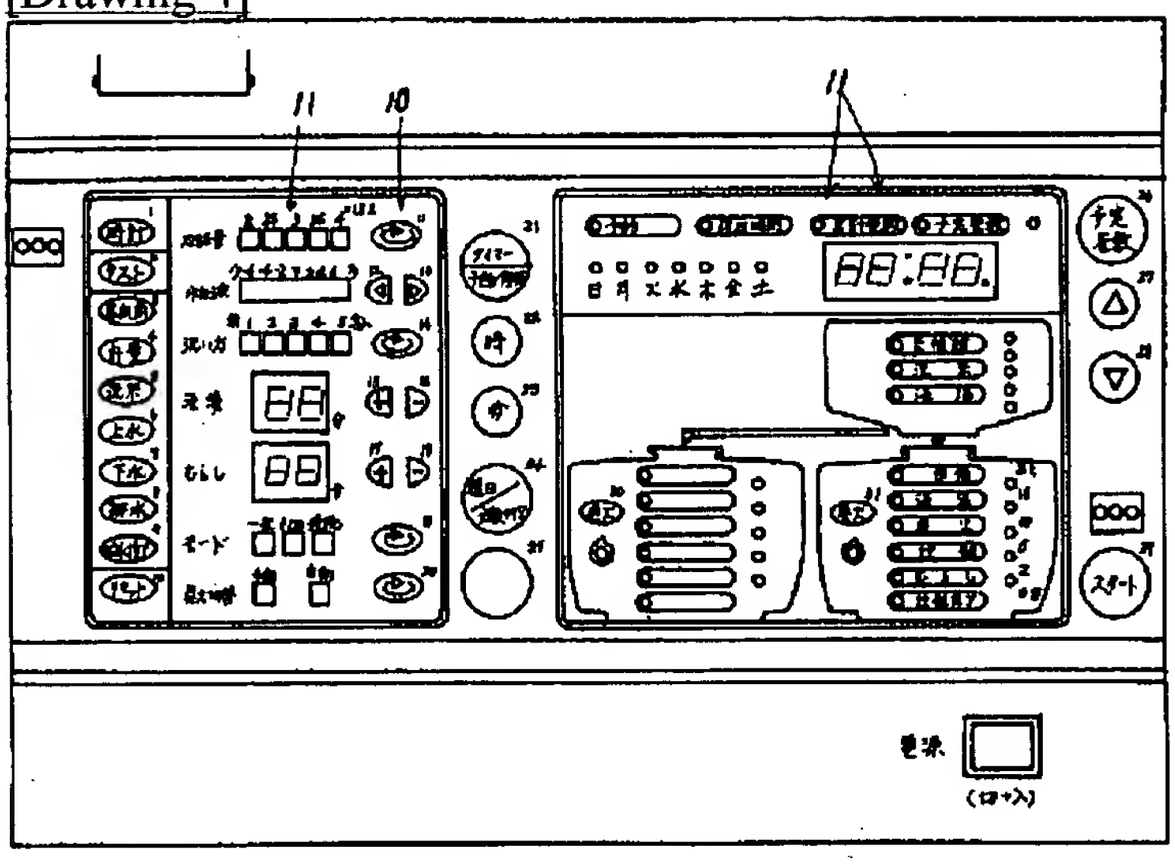
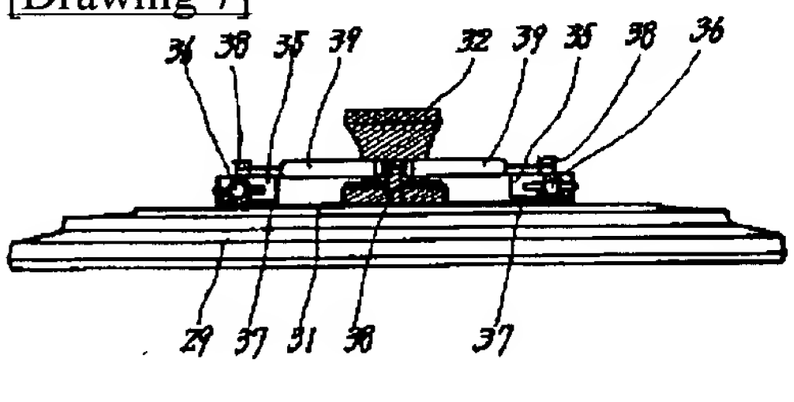


[Drawing 7]



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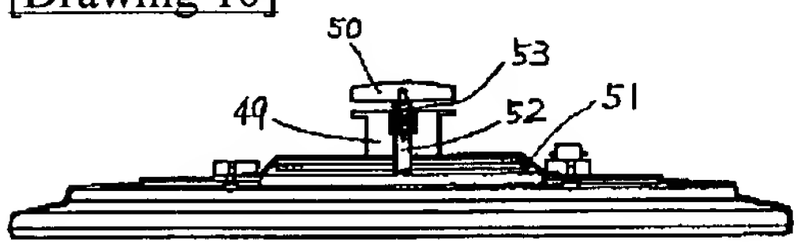
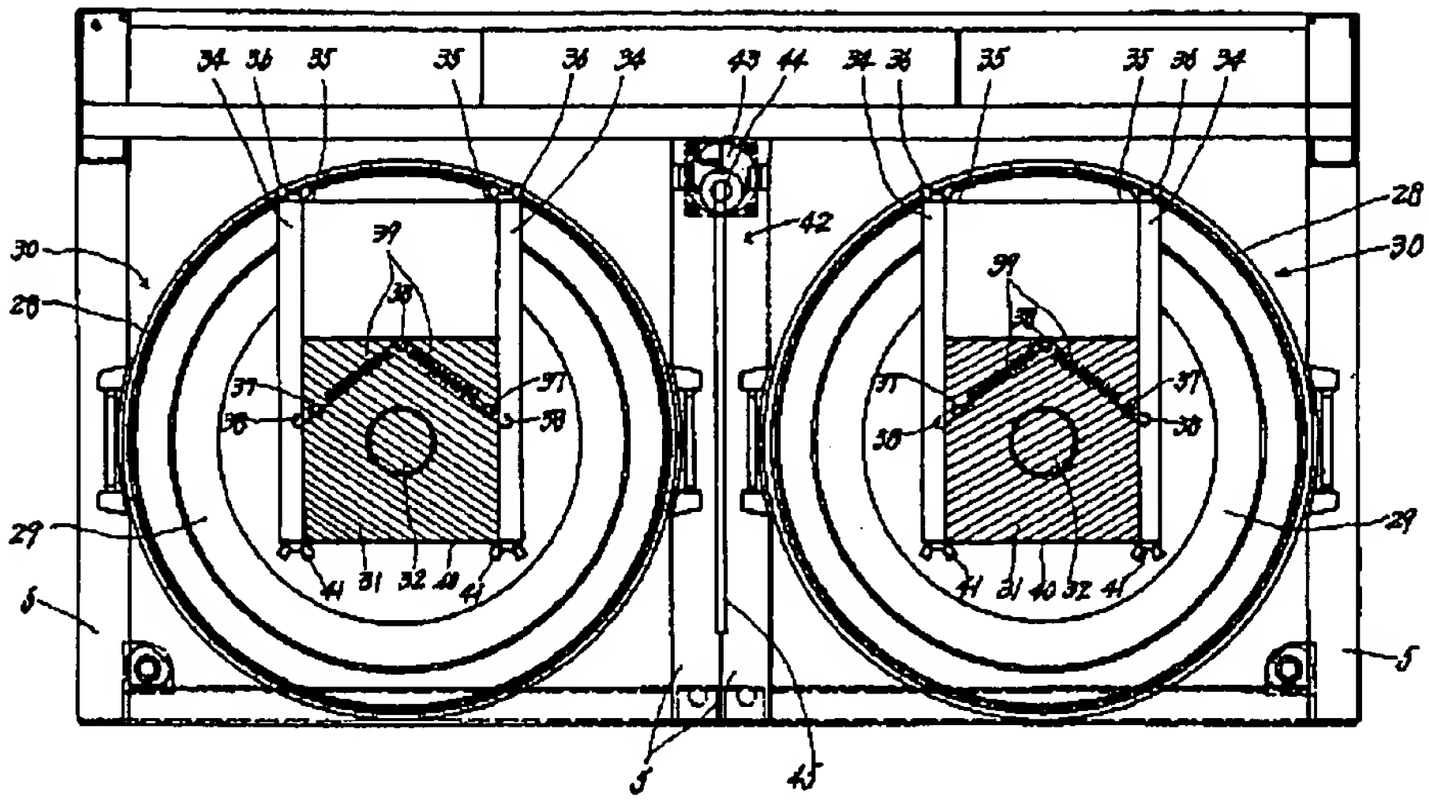
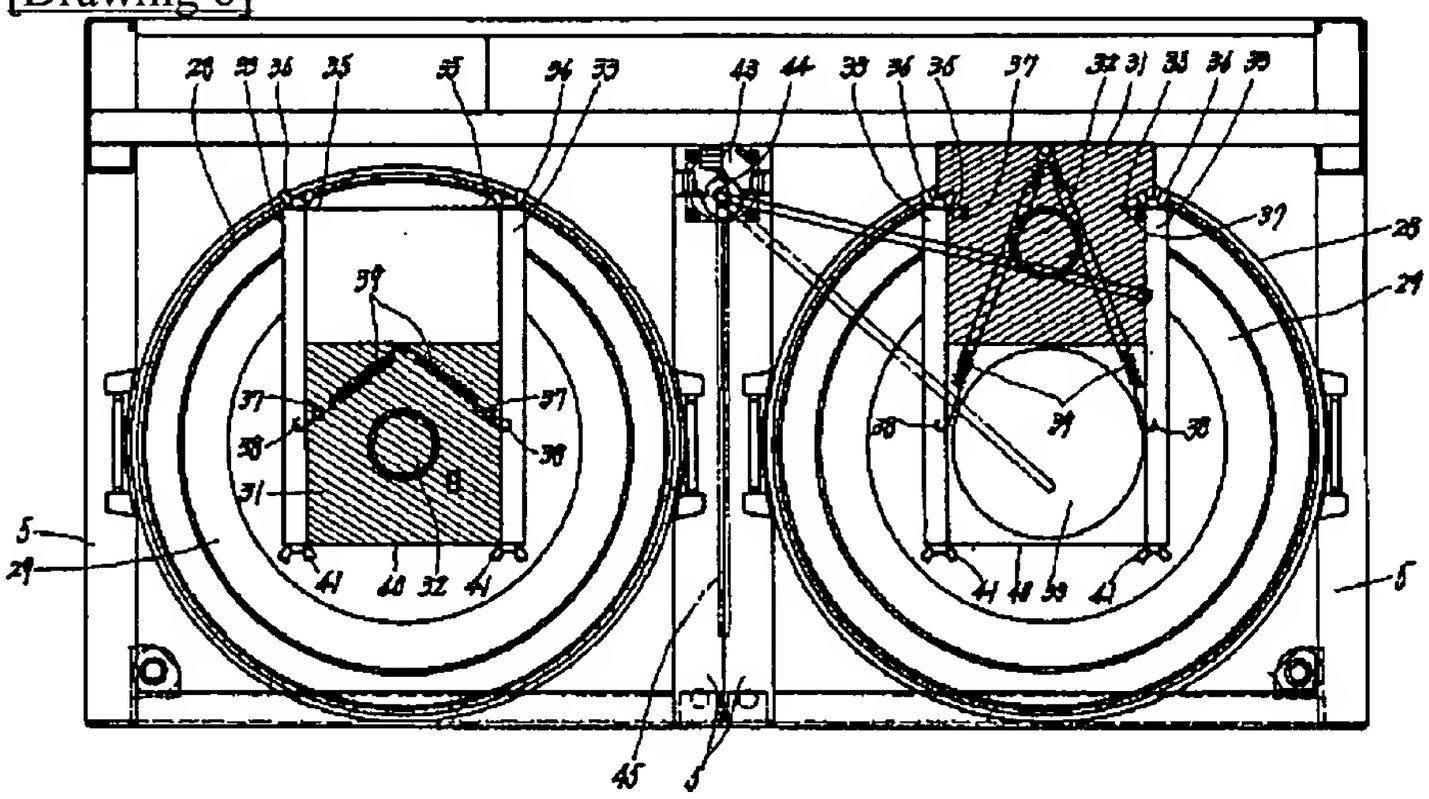


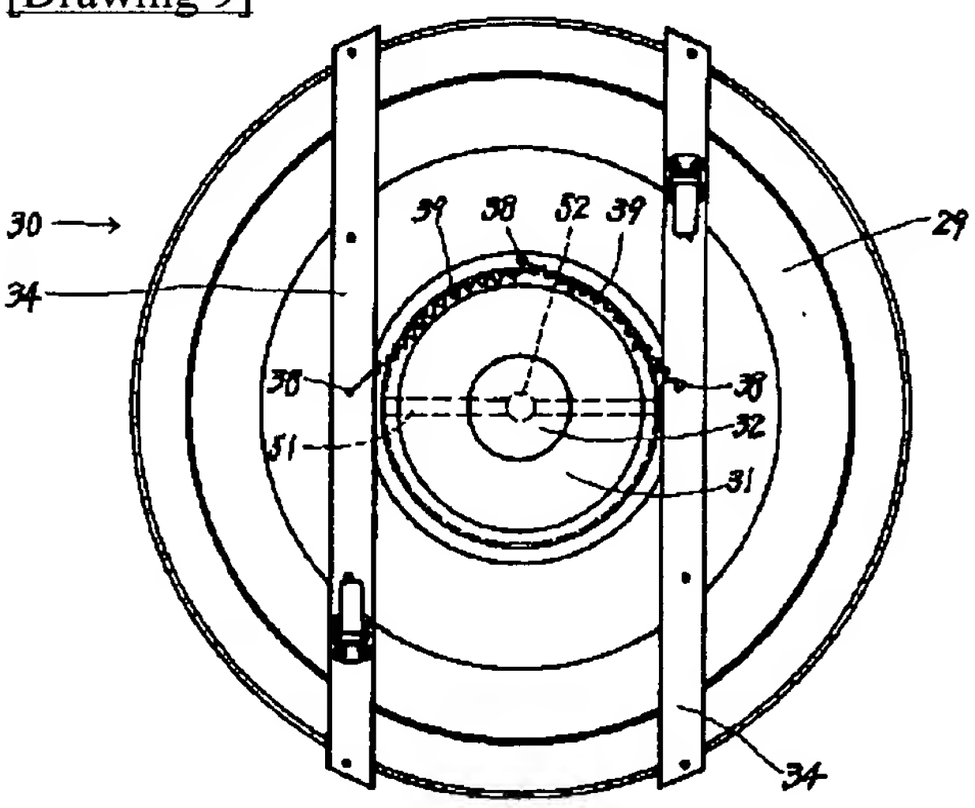
[Drawing 5]



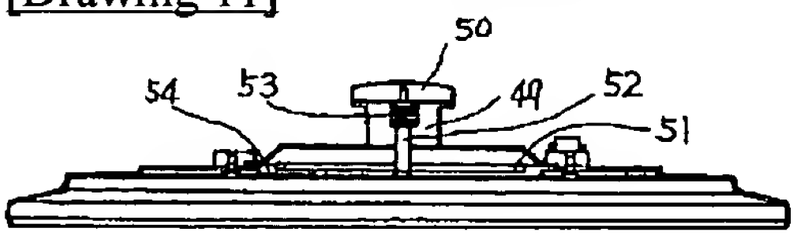
[Drawing 6]



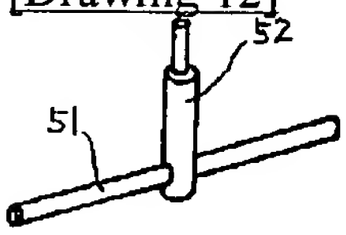
[Drawing 9]



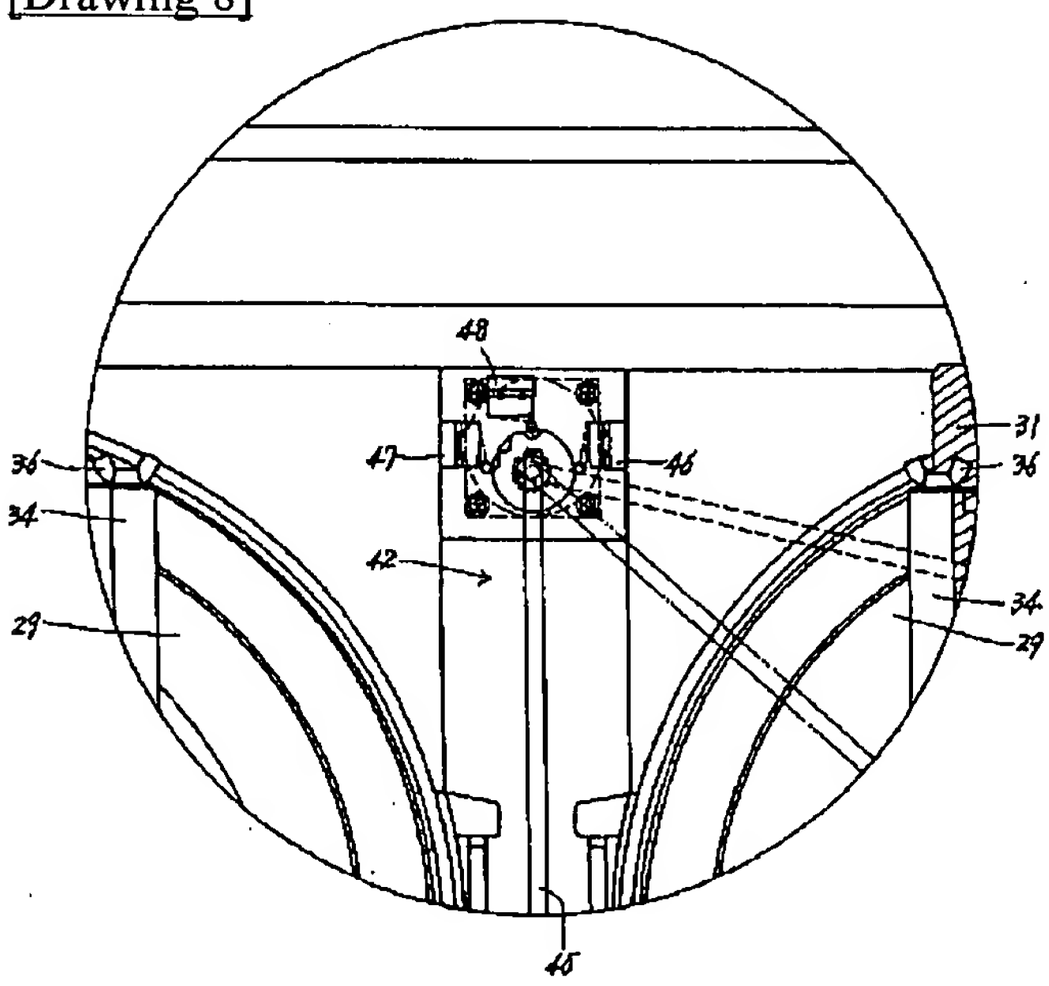
[Drawing 11]



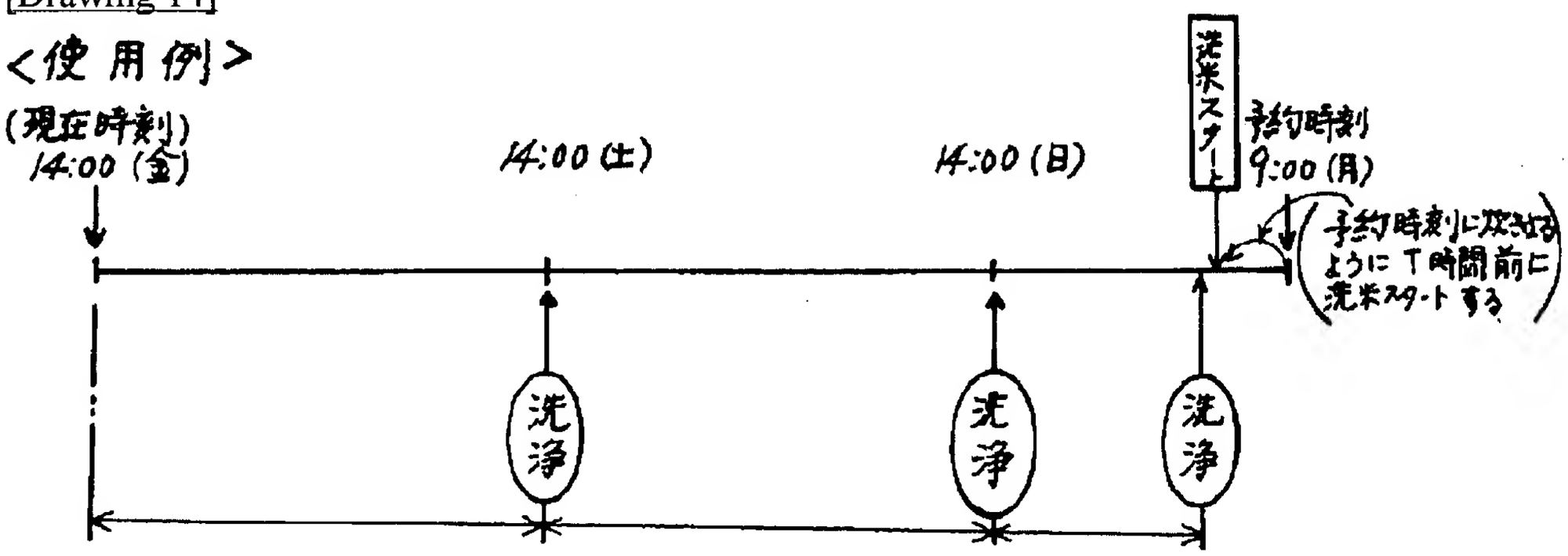
[Drawing 12]



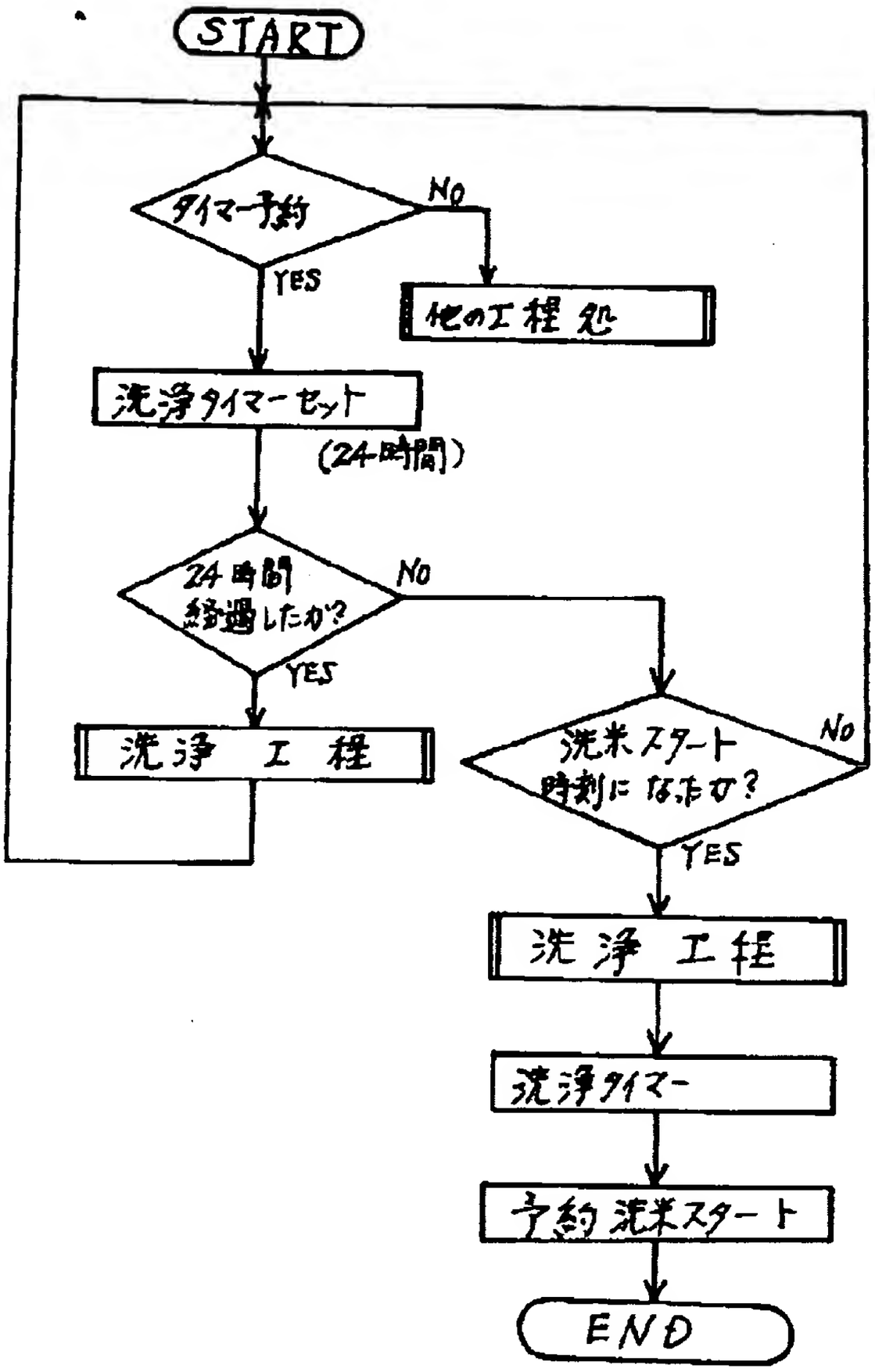
[Drawing 8]



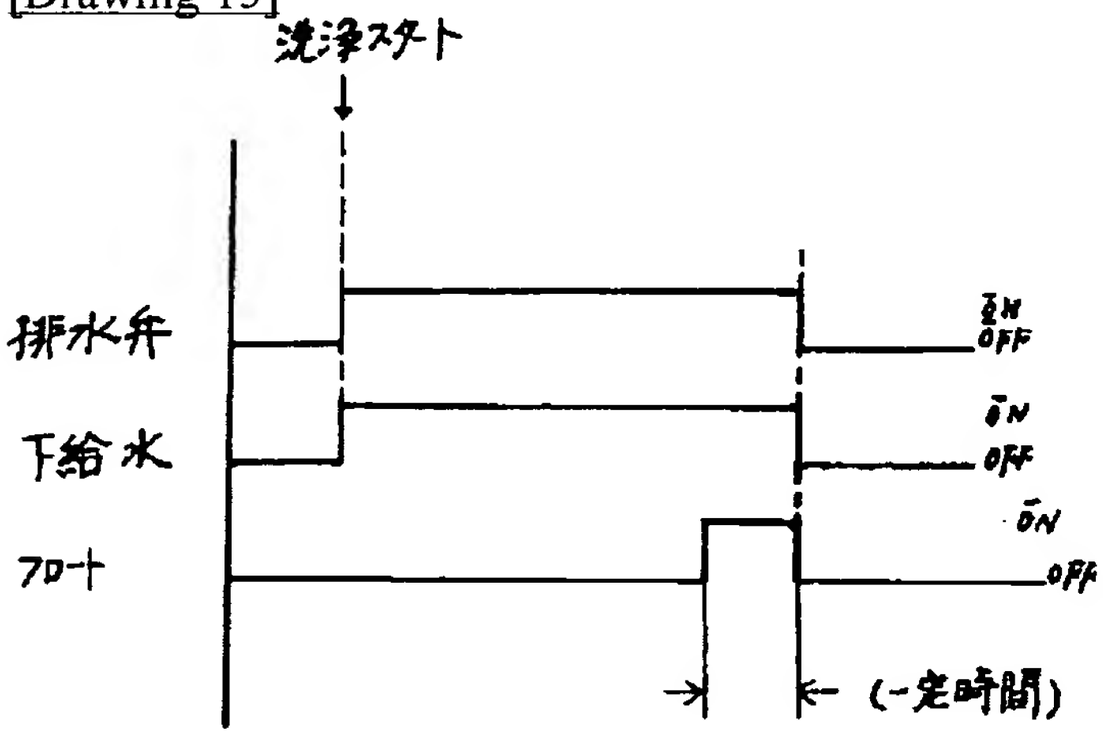
[Drawing 14]



[Drawing 13]



[Drawing 15]



(洗浄工程)

[Translation done.]

(19)日本国特許庁（ＪＰ）　(12)**公開特許公報**（A）　(11)特許出願公開番号

特開平8－228920

(43)公開日　平成８年(1996)９月10日

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Ａ４７Ｊ　27/00	１０９		Ａ４７Ｊ　27/00	１０９Ｂ

審査請求　未請求　請求項の数１　ＯＬ　（全 ８ 頁）

(21)出願番号　特願平7－37960

(22)出願日　平成７年(1995)２月27日

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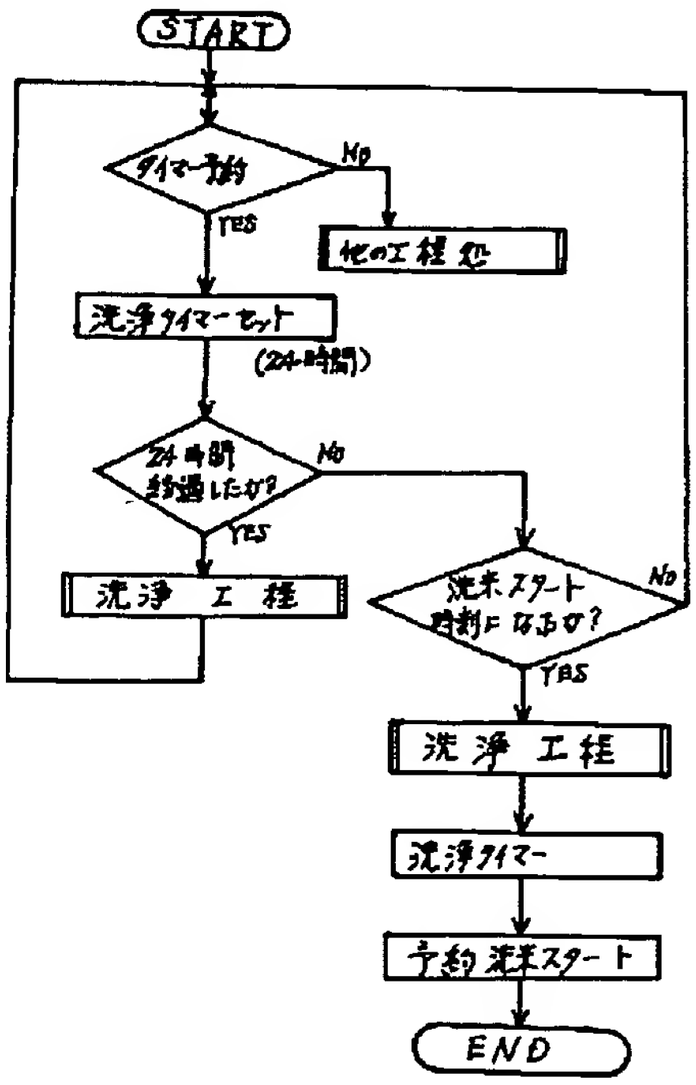
最終頁に続く

(54)【発明の名称】　容器洗浄装置

(57)【要約】
【目的】予約時間が長い場合でも容器に糠の付着するのを防止する。
【構成】米や水を収容し洗浄する容器１と、該容器内に水を供給するノズルと、作業開始時刻を予約し設定し得る作業設定手段とを備え、予約時刻に達する前に容器内に給水する構成の容器洗浄装置。



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【特許請求の範囲】
【請求項１】　米を収容する容器１と、該容器内に給水する給水手段と、作業開始時刻を設定する作業設定手段とを備え、該作業設定手段により設定した時刻に到達する前に容器内に給水する構成とした容器洗浄装置。
【発明の詳細な説明】
【０００１】
【産業上の利用分野】この発明は、例えば、米を洗浄し炊飯する洗米炊飯器等に利用できる容器洗浄装置に関する。
【０００２】
【従来の技術】予約機能を持たせ、設定した時刻に達すると米を計量し洗浄する構成である。
【０００３】
【この発明が解決しようとする課題】しかしながら、現在時刻から設定した時刻が長いと、例えば週末の金曜日に作業を終え翌週の月曜日に作業を開始する場合には約２日（４８時間）余りあるので、その間に容器内に虫が入ると容器が不衛生である。
【０００４】
【課題を解決するための手段】この発明は、予め容器に給水することにより容器を清潔にしご飯の品質を高め得る容器洗浄装置を提供するものであって、つぎの技術的手段を講じた。すなわち、米を収容する容器１と、該容器内に給水する給水手段と、作業開始時刻を設定する作業設定手段とを備え、該作業設定手段により設定した時刻に到達する前に容器内に給水する構成とした容器洗浄装置とする。
【０００５】
【作用】作業者が次回の作業開始時刻を設定する。そして、設定時刻に到達すると作業を開始するが、この時刻に到達する前に給水手段により容器１に給水する。
【０００６】
【効果】次回の作業開始時刻に到達する前に容器内に自動的に給水するので、容器を洗浄するとことができ衛生的である。
【０００７】
【実施例】以下、この発明の実施例を図面に基づいて説明する。まず、その構成について説明すると、洗米炊飯装置２は複数個の縦フレーム３と横フレーム４と脚フレーム５とを一体に枠組した本体フレーム６、貯米部７、洗浄部８、炊飯部９等を備えている。
【０００８】貯米部７は下部を開放した箱型のケース１３に米を貯留するホッパー（図示せず）を内装し、前壁に炊飯量や水加減や洗い方等を選択する各種の選択スイッチ１０、夫々の表示具１１等を備えた操作パネル１２を設けている。なお、該ホッパーの下端近くに貯留している米をほぼ所定量づつ繰り出しロール（図示せず）を回転可能に設けている。
【０００９】洗浄部８は前記ケース１３の開放部を覆う

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底板（図示せず）の下面に上端部を着脱自在に取り付けると共に、上下両端面を開放し且つ下端部を細く形成した容器１、この容器１のほぼ中心部に縦方向に軸芯を有し回転可能に設けた回転軸１４の外周面に取り付けている回転体１５、容器１の下端部外周に固着した受板１６の下面に上下両端面を開放し着脱自在に取り付けているジャケット１７等を備えている。そして、該ジャケット１７は２室の中空状に設け、１室内に上端部を前記容器１の下端開口部にのぞみ下端をジャケット１７の下端開口部にのぞむフィルター１８を設けている。また、ジャケット１７の他室内にジャケット１７の排水口１９を開閉する開閉弁２０を設けてる。
【００１０】なお、該開閉弁２０は横方向に軸芯を有する軸２１に取り付け、この軸２１はソレノイド２２により作動する作動機構２３に当接している。２４はリターンスプリングである。また、２５は容器１にのぞむシャワーノズル（図示せず）に連通すると共に給水源に連通する給水管２６の中間部に設けた電磁弁である。前記のように貯米部７と洗浄部８とは底板を介して一体に構成していると共にモータ（図示せず）やローラ（図示せず）等の横移動手段により洗米炊飯装置２の正面視において左右方向に往復移動可能に構成している。そして、前記底板に供給口（図示せず）を設け、繰り出しロールにより繰り出された米は供給口を通って容器１に入る構成としている。
【００１１】炊飯部９はガスコンロ等を内装した外釜２７や外釜２７から上下方向に抜き差しできる内釜２８や内釜２８を開閉する炊飯蓋２９等を有する炊飯器３０を、洗米炊飯装置２の正面視において左右方向に複数個（実施例では２個だが１個又は３個以上でもよい）設けている。なお、該炊飯器３０は前後方向に引き出し可能に設けている。
【００１２】シャッター３１は平面視矩形状の板材で形成しており、上面中央部に把っ手３２を設けている。そして、該シャッター３１は炊飯蓋２９の中央部に設けた円状の米供給口３３よりも大きく設けている。シャッターガイドレール３４は長手方向を前後方向に位置し前記米供給口３３を挟んで左右両側に炊飯蓋２９の上面に一体に設け、前記シャッター３１を前後方向に案内可能に設けている。３５はシャッターガイドレール３４の後端面にネジ（実施例ではチョウボルトだかナットでもよい）３６により着脱自在に設けたストッパーである。
【００１３】３７は前記シャッターガイドレール間で且つシャッター３１の左右両端部で上面に設けたストッパー当て体であり、シャッター３１が後側に移動し米供給口３３を全開すると前記ストッパー３５に当る高さに設けている。また、シャッター３１の後端側で左右方向中間部の上面と、各シャッターガイドレール３４の中間部にスプリング係止軸３８を立設している。３９は一端部をシャッターガイドレール３４に設けた係止軸３８に係

止し他端部をシャッター３１に設けた係止軸３８に係止しているシャッターリターンスプリングである。把っ手３２に外力を付与しないとき、シャッターリターンスプリング３９はシャッター３１に設けた係止軸３８を引張りシャッター３１により米供給口３３を全開する構成である。

【００１４】４０は前記シャッターガイドレール３４の前端面を連結する連結板であってネジ（実施例ではチョウボルトであるがナットでもよい）４１により着脱自在に設けている。シャッター開閉装置４２は炊飯器３０の引き出し方向とは反対側に設けた正逆転モータ４３により正逆回転するカム４４とカム４４に基部を着脱自在に取り付け回動したときに把っ手３２に当るシャッター開閉アーム４５を備えている。４６は右シャッター開スイッチ、４７は左シャッター開スイッチ、４８はシャッター開閉アーム４５の停止位置を感知する停止位置感知スイッチであって、それぞれ「開」又は「停止」を検出するスイッチである。

【００１５】図９はシャッター３１の別実施例であって、把っ手３２を上下方向に分割し、下部４９をシャッター３１に取り付けている。上部５０は下端部に横方向に軸芯を有するロッド５１を取り付けた縦ピン５２の上端部に取り付けている。５３は縦ピン５２に嵌装し把っ手３２の上部５０の下面と下部４９の上面との間に設けた圧縮スプリングである。そして、上部５０が圧縮スプリング５３に押されて下部４９と離れて上側に位置すると、ロッド５１は炊飯蓋２９の米供給口３３に形成したバーリング５４の上方にあってシャッター３１はシャッターガイドレール３４に沿って自由に移動し、上部５０が圧縮スプリング５３を押して下部４９と接触する縦ピン５２と共に下側に移動したロッド５１がバーリング５４に摺接し移動を規制するように構成している。従って、把っ手３２の上部５０を上下方向に移動する簡単な手段でシャッター３１の動きを規制又は自由に移動できるので、炊飯作業後に炊飯蓋２９を単独で持ち上げて運ぶ場合に指を挟むことがなく安全である。

【００１６】なお、洗米炊飯装置２は図示していないがマイクロコンピュータにより制御される構成としている。つぎに、その作用についてフローチャートの一部の図１３のフローチャートを併用して説明する。まず、予約炊飯について説明すると、操作パネル１２の選択スイッチ１０を操作して所望の作業条件を入力し、そして、例えば現在時刻が金曜日の１４：００とし予約時刻を月曜日の９：００にセットした場合（図１４参照）、土曜日の１４：００と日曜日の１４：００に洗浄工程に入り電磁弁２５が「開」、ソレノイド２２の励磁により開閉弁２０が排水口１９を閉じて給水が行なわれ容器１に水を貯留する（図１５参照）。そして、所定時間後に電磁弁２５への通電を解除して給水を停止し、またソレノイド２２への通電を解除して開閉弁２０が排水口１９を開

放し容器１の貯留水を排出する。従って、予約した時刻に作業を開始する前に洗浄用の容器１を洗浄するので糠が付着するのを解消し食味の良いご飯に炊き上げることができる。

【００１７】そして、月曜日の９：００に達すると、ホッパー内の米は繰り出しロールによって繰り出される。すると、米は底板の供給口（図示せず）を通って容器１に収容される。また、電磁弁２５は「開」になり水を給水管２６を通ってノズルから容器内に供給する。そして、回転体１５は回転して水及び米を撹拌し洗浄する。このとき生じた汚水はフィルター１８、排水口１９を通ってジャケット１７から排出される。

【００１８】その後、洗浄作業を終えると、ソレノイド２２が励磁されるので、開閉弁２０は作動機構２３によりリターンスプリング２４を圧して移動する軸２１によって前進し排水口１９を閉じる。なお、図示していないが水位弁も同様の作業により水位口（図示せず）を閉じる。つぎに、電磁弁２５が「閉」から「開」になり、水は給水管２６を通ってノズルから容器１に供給される。そして、満水になると電磁弁２５を「閉」にし給水を停止する。

【００１９】つづいて、ソレノイド２２への通電を解除すると、水位弁はスプリング２４により元の位置に復帰するので、これに関連して容器内の水はフィルター１８、水位口、排水ジャケット１７を通って排出される。所定時間後、すなわち所定水位に達すると、再びソレノイド２２が励磁され水位弁が作動機構等により水位口を閉じる。

【００２０】そして、投下弁が下降すると、容器１に収容している水及び米は排米口から落下し米供給口３３を通って内釜２８に収容される。その後、投下弁は上昇し排米口を閉じる。つづいて、正逆転モータ４３は逆転して元の位置（イ）に戻ると停止位置感知スイッチ４８が「ＯＮ」になる。すると、正逆転モータ４３は停止する。これに関連して、シャッターリターンスプリング３９に引張られたシャッター３１は移動し米供給口３３を閉じる。このとき、シャッター３１は連結板４０により受け止められる。

【００２１】点火スイッチを「ＯＮ」にして炊飯作業を始める（内釜内で浸漬する場合は所定間後に炊飯作業を開始する）。その後、炊飯を終えると炊飯器３０を引き出す。つぎに、正面視において左側の炊飯器３０に米と水を供給する場合には、正逆転モータ４３は逆転する。すると、シャッター開閉アーム４５は矢印ロ方向に回動して把っ手３２に当りシャッターリターンスプリング３９の力に抗して押して移動させ米供給口３３を開ける。その後、内釜２８が米と水を収容すると正逆転モータ４３は正転しシャッター開閉アーム４５を元の位置に戻すので、シャッター３１も元の位置に復帰し米供給口３３を閉じる。

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【００２２】このように、１個のシャッター開閉アーム４４５によりシャッター３１を開閉できるので安価で構成も簡単になる。また、炊飯器３０と炊飯器３０の中間部にシャッター開閉装置４２を設けることができるので炊飯器間のスペースを有効に利用できる。

【図面の簡単な説明】

【図１】　洗米炊飯装置の正面図。

【図２】　洗米炊飯装置の側面図。

【図３】　容器の側面図。

【図4】　操作パネルの正面図。

【図５】　シャッターが閉じた炊飯部の平面図。

【図６】　一方の炊飯器のシャッターを開いた炊飯部の平面図。

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【図７】　炊飯蓋の背面図。

【図８】　シャッター開閉装置の平面図。

【図９】　別実施例の炊飯蓋を有する炊飯器の平面図。

【図１０】　シャッターフリー状態の炊飯蓋の正断面図。

【図１１】　シャッター固定状態の炊飯蓋の正断面図。

【図１２】　ブロック回路。

【図１３】　フローチャート。

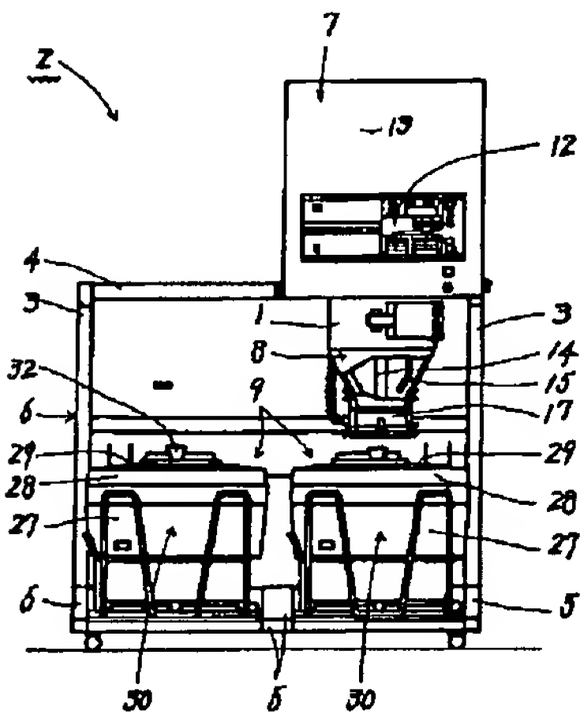
【図１４】　作業工程図。

【図１５】　タイムチャート。

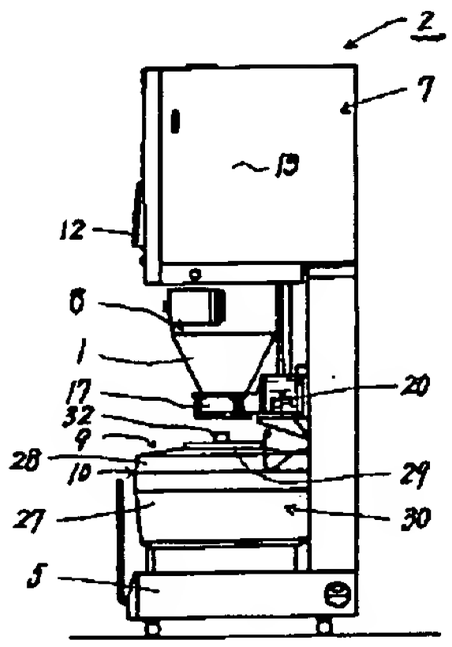
【符号の説明】

1　容器

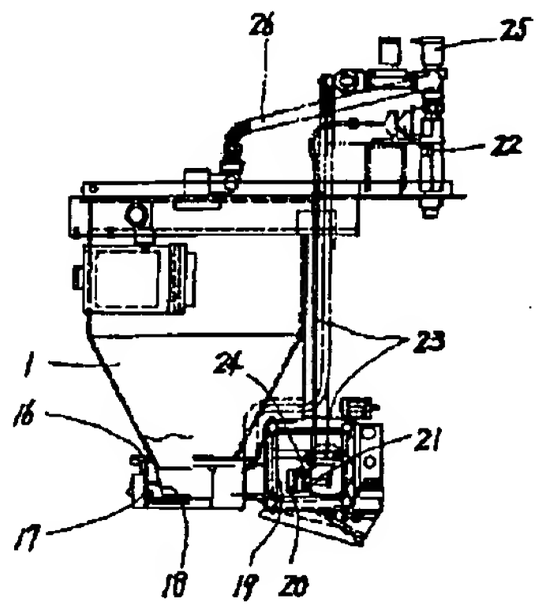
【図1】



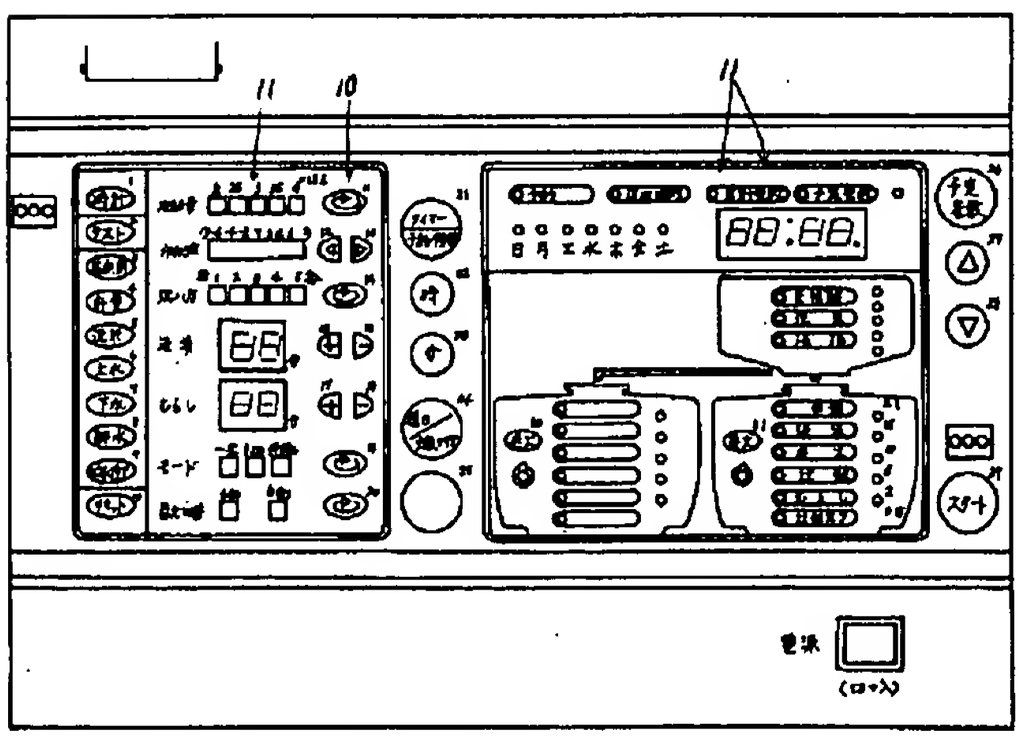
【図2】



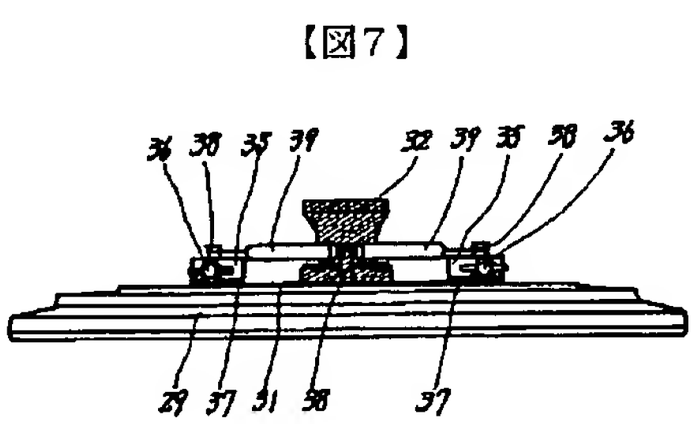
【図3】



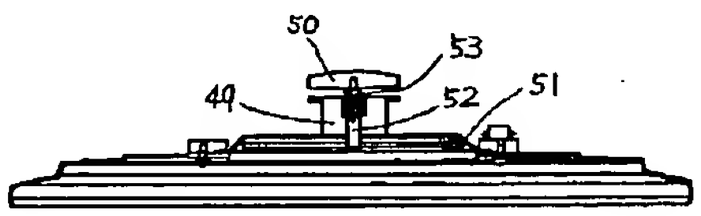
【図4】



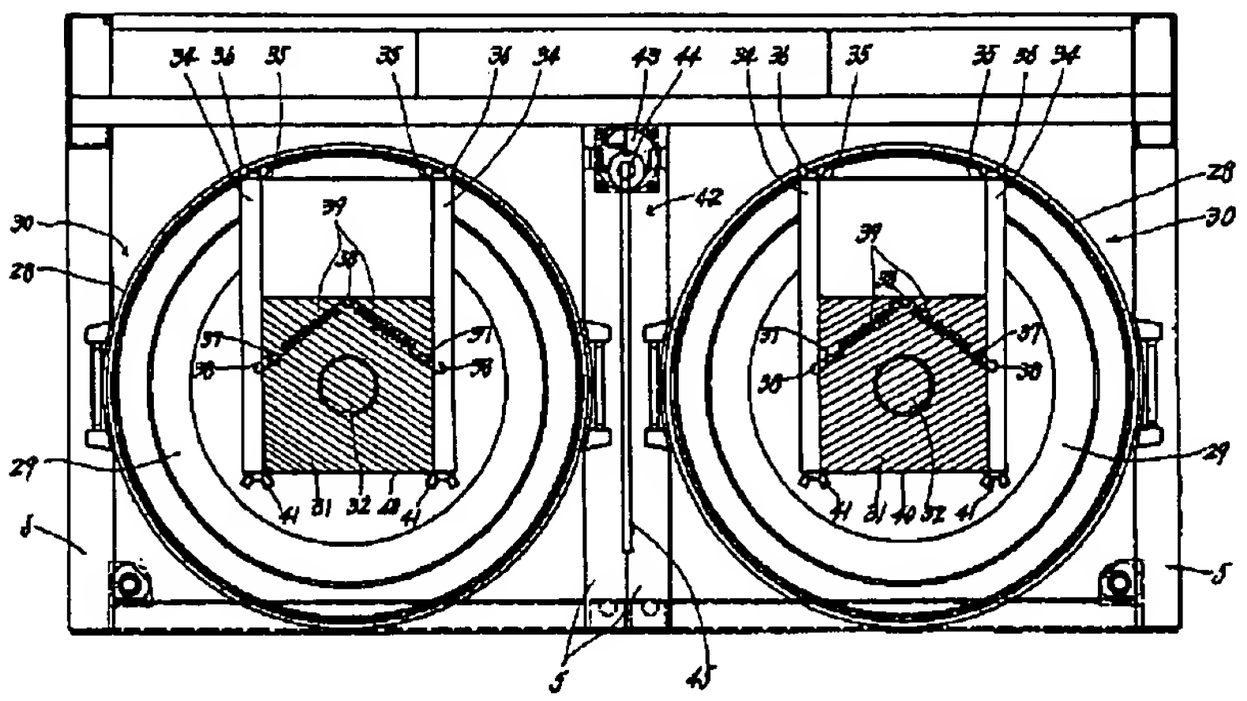
【図7】



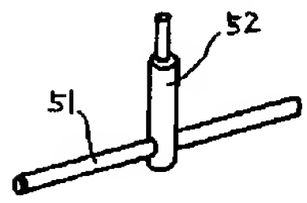
【図10】



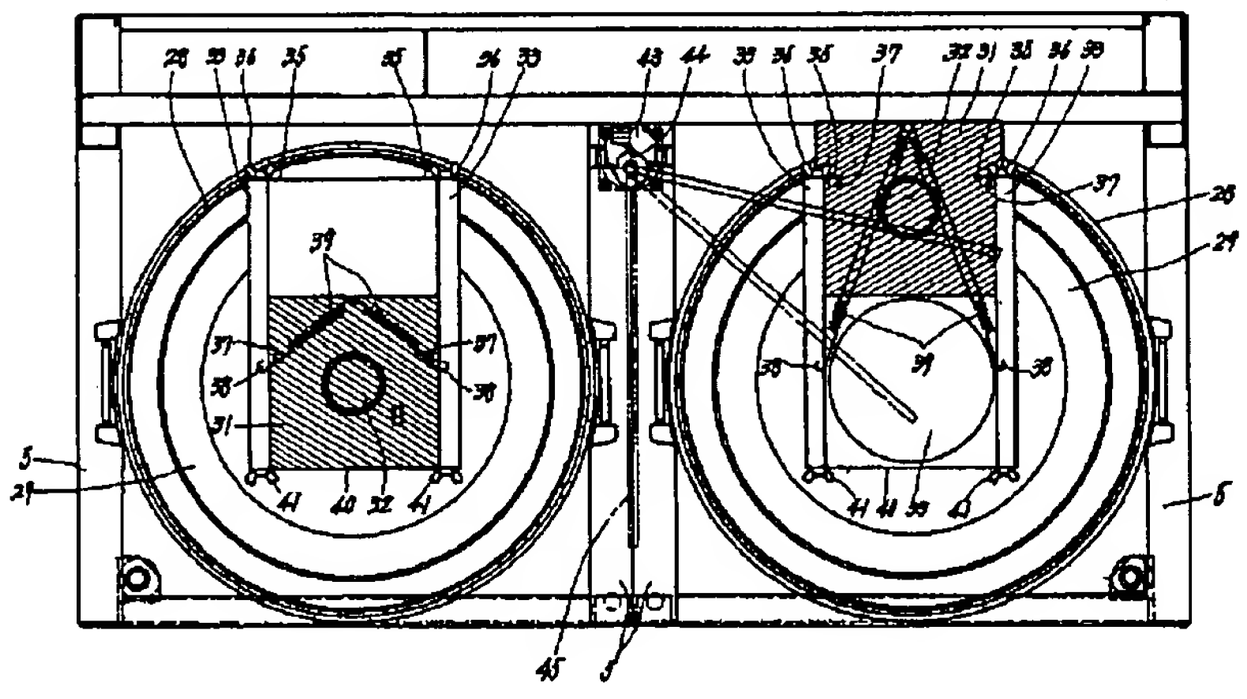
【図5】



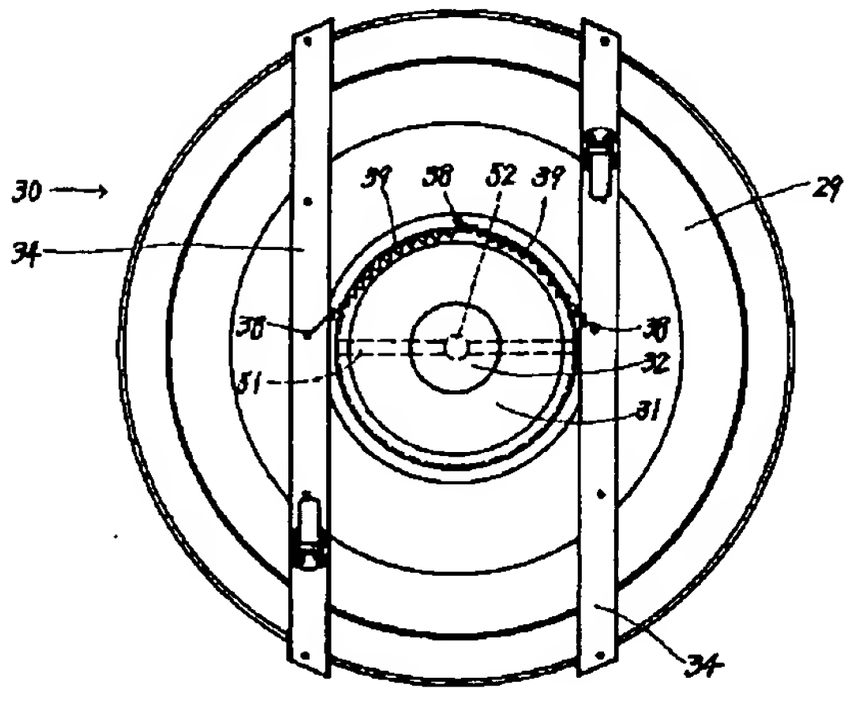
【図12】



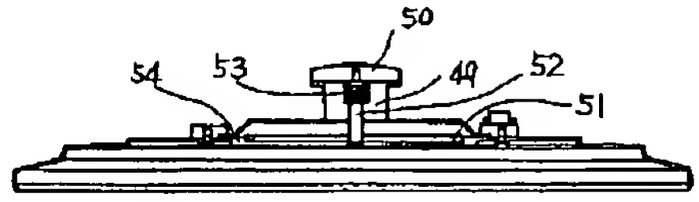
【図6】



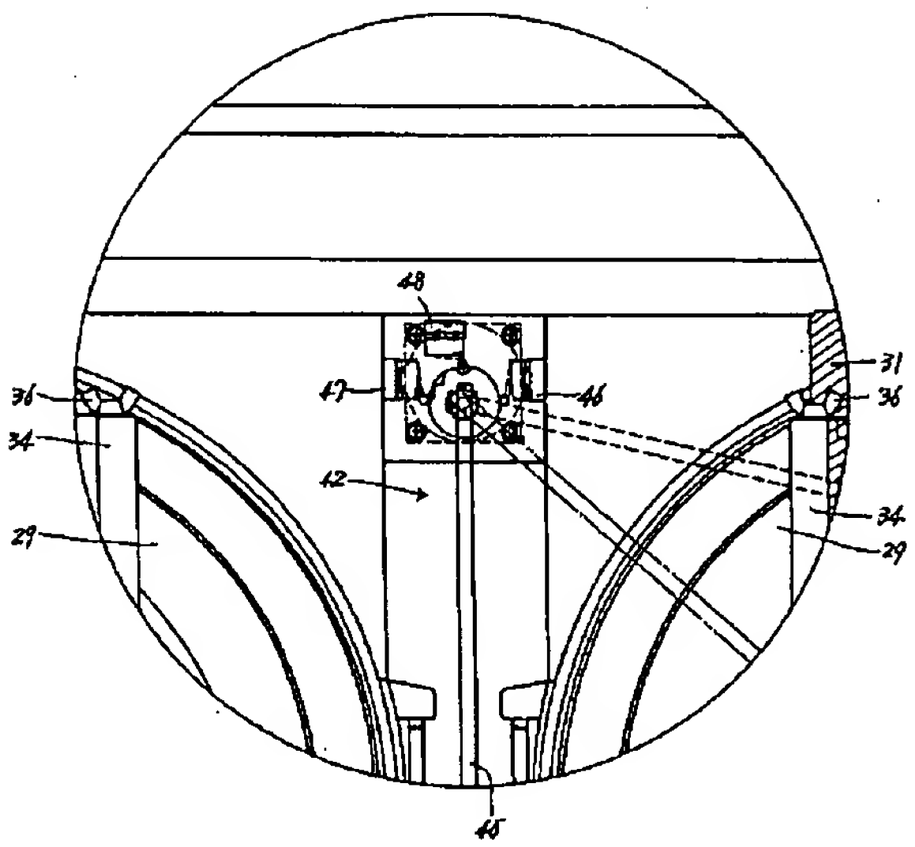
【図9】



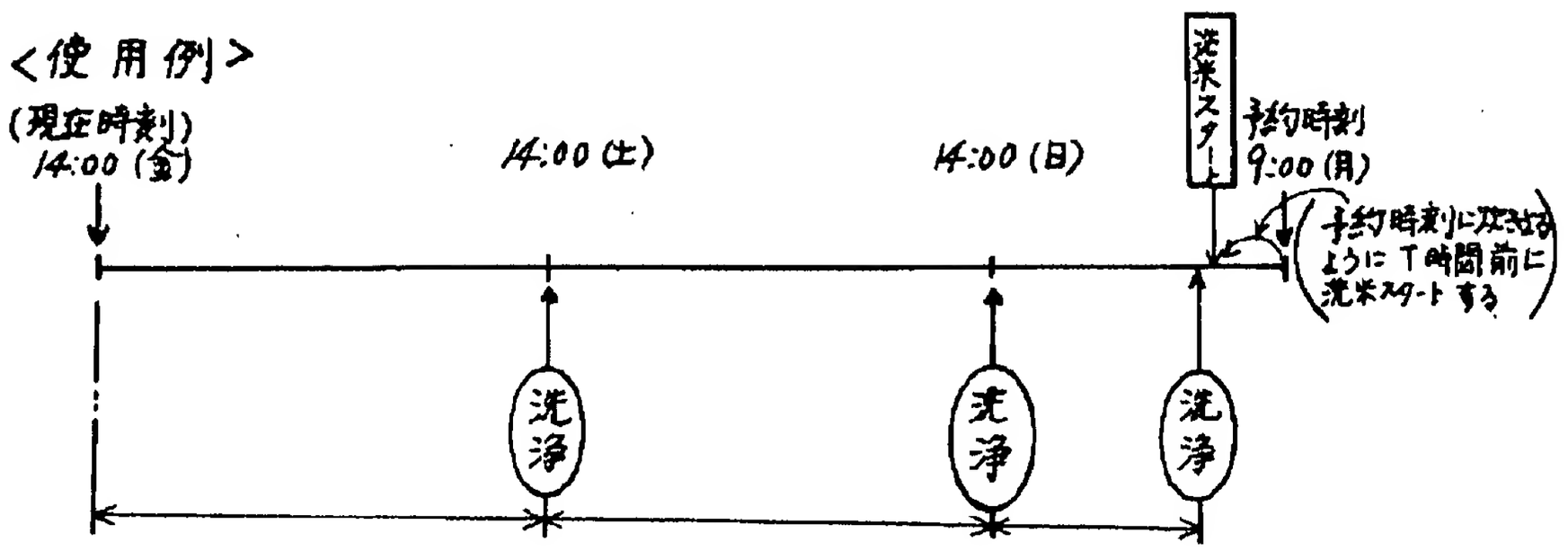
【図11】



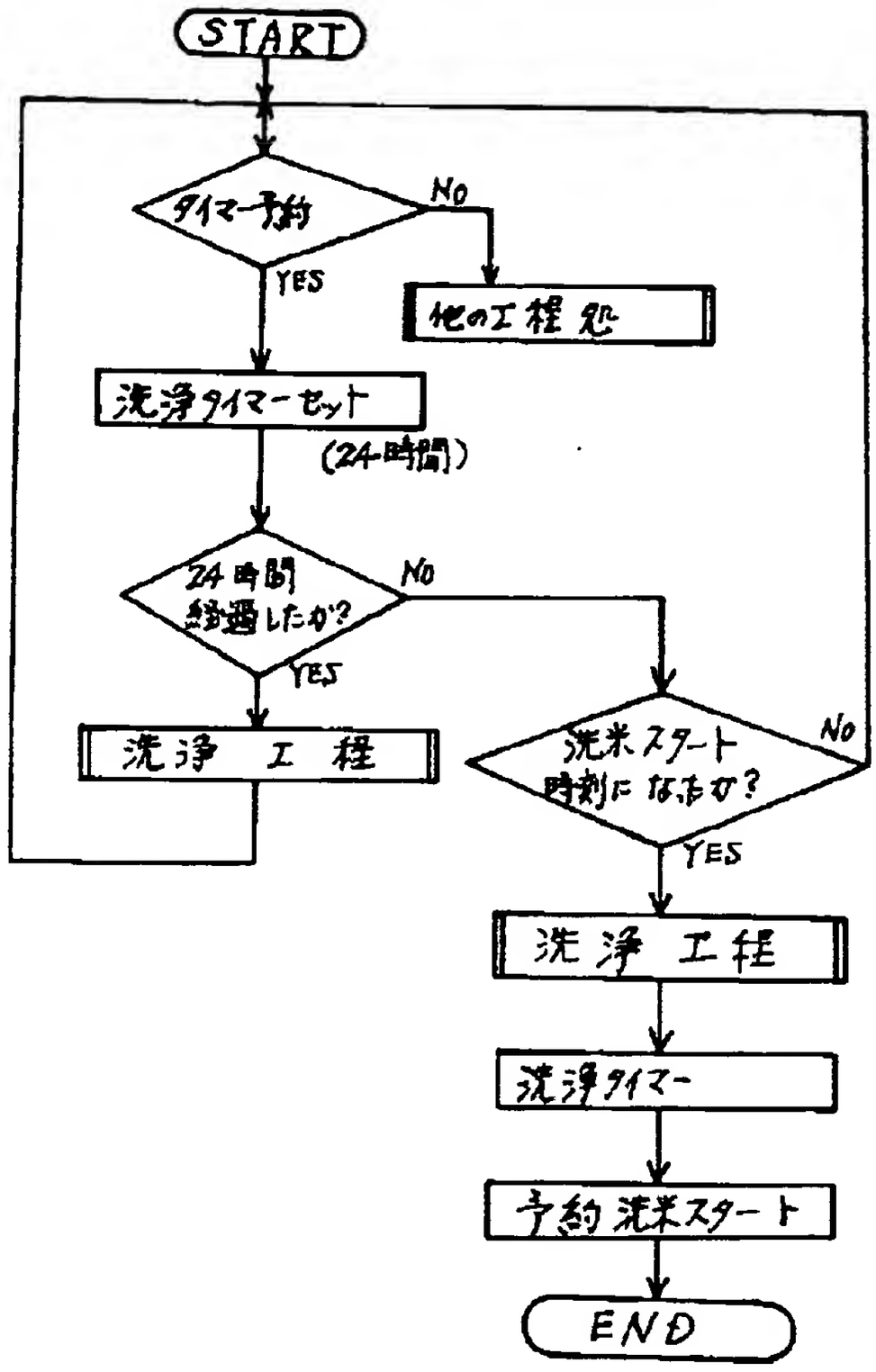
【図8】



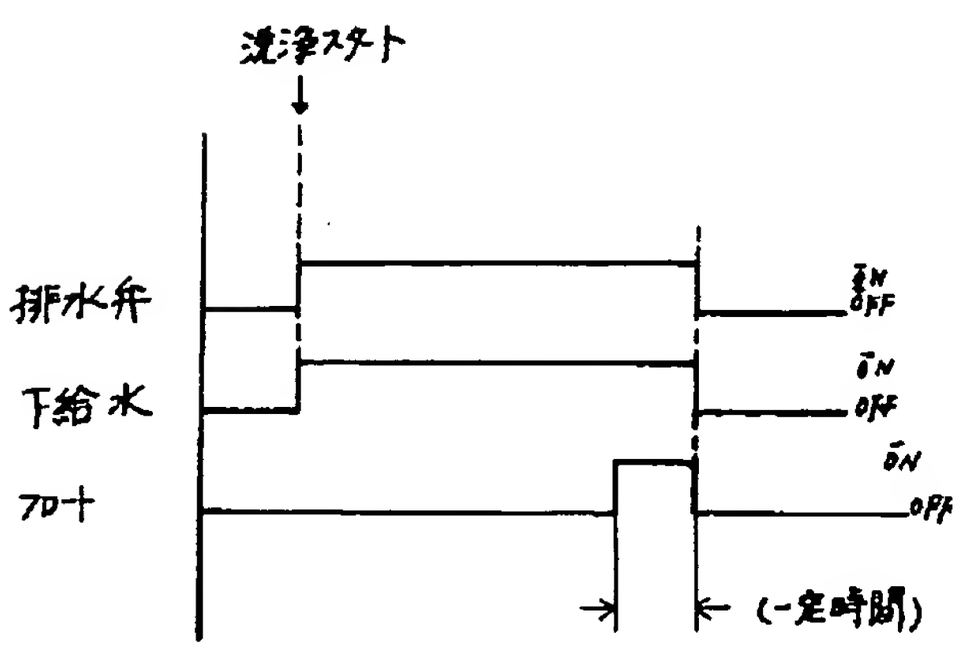
【図14】



【図13】



【図15】



（洗浄工程）

フロントページの続き

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TITLE: Rice cooker with cooked rice temp. maintenance function
- has calendar that displays date which is used by controller in managing heat insulator in maintaining cooked rice temp.

PATENT-ASSIGNEE: TIGER MAHOBIN KK[TIGEN]

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PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 08332148 A	December 17, 1996	N/A	019	A47J 027/00

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
JP 08332148A	N/A	1995JP-0143420	June 9, 1995

INT-CL (IPC): A47J027/00

ABSTRACTED-PUB-NO: JP 08332148A

BASIC-ABSTRACT:

**The rice cooker (1) has a heating coil (7) arranged at the external lower
portion of an internal pot (2) which accommodates rice and water. A
reservation unit provides a starting time reservation for the heating coil used
in heating the inner pot. A heat insulator maintains the warm temp. of the
cooked rice. A clock provides a cooking time.**

**A display shows the provided reservation time corresp. to the provided cooking
time. A date is displayed through a calendar. A controller manages the heat
insulator in maintaining the cooked rice temp. corresp. to the displayed date.**

**ADVANTAGE - Enables control of cooked rice temp. corresp. to displayed date
without influence of environment temp. by managing heat insulator. Raises or
maintains energising rate of heater through heat insulation temp. change unit
corresp. to environment temp. during e.g. winter, summer.**

CHOSEN-DRAWING: Dwg.1/14

**TITLE-TERMS: RICE COOKER COOK RICE TEMPERATURE MAINTAIN FUNCTION CALENDAR
DISPLAY DATE CONTROL MANAGE HEAT INSULATE MAINTAIN COOK RICE
TEMPERATURE**

DERWENT-CLASS: P28 X27

EPI-CODES: X27-C04;

SECONDARY-ACC-NO:
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